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ABSTRACT

Recent polls seem to indicate that many Americans rely on television as a credible and primary source of news. To test the accuracy of this news, a study examined three networks' newscasts of science news, the attitudes of the science sources toward reporting in their field, and the factors related to accuracy. The Vanderbilt News Archives Index was examined to locate science stories. When a located item was reported on more than one network, only one version was chosen and selection of a network was made on a rotating basis. Transcriptions were made of the news broadcast audiotapes and mailed with a questionnaire to the attributed source. The original scientists contacted by reporters were asked whether inaccuracies had occurred in the news report, how the reporter had gathered the data, and what the respondents' attitudes were toward network television. The Charnley method of newspaper accuracy assessment was used, with appropriate variations for its application to television, though it was found that sources were difficult to track down and that transcripts of the broadcasts lacked the visual element that is important in television news coverage. Based on those presumed to have received the questionnaire packets, there was a 56% return rate. Data revealed that nearly half the respondents (48.5%) found the stories completely accurate, while 14% judged them somewhat inaccurate. Among respondent complaints were lack of air time given a subject, omission of essential details, sensationalism, confusing presentation of facts, and misleading editing practices. Although preliminary findings indicate that television science news is slightly more accurate than newspaper coverage, this finding may be due to factors like the brevity of television stories and printing errors that are beyond a news writer's control. (CRH)

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Scientific Sources' Perception of Network News Accuracy

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Scientific Sources' Perception of Network News Accuracy

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Abstract

This study examines the accuracy of the three commercial network newscasts in reporting science news, the attitudes of scientist -- sources toward television reporting in their field, and the factors which seem to be related to errors. The researchers used the index to the Vanderbilt News Archives to find science stories reported on the three networks from July, 1982 to December, 1982. Selected stories were ordered from the Archives and transcribed. A copy of the transcription and a questionnaire were sent to each of the scientists to whom a story was attributed. The questionnaire asked them whether inaccuracies had occurred, how the reporter had gathered the information, and what the respondents' attitudes were toward network television. The methodology used to determine accuracy was similar to that used in some studies of science and general reporting in newspapers.

Results showed that 48.5% of the respondents said that the story was entirely accurate. One study of the accuracy of science reporting in newspapers indicated only 29.4% of scientists find the story completely accurate. In the present study, respondents complained most frequently that too little time was given to the story and that essential detail was omitted. The respondents' feeling about television reporting was measured by an attitude scale. Although scientist -- sources were somewhat critical of science

reporting on television, they considered it was still worth their time to talk to reporters. The scientists were asked about the newsgathering process (the origin of the story, type of contact with reporter, etc.) and these answers were crosstabulated with their perceptions of the story's accuracy.

SCIENTIFIC SOURCES' PERCEPTION OF

NETWORK NEWS ACCURACY

Abstract

This study examines the accuracy of three network newscasts in reporting science news, the attitudes of scientist -- sources toward television reporting in their field, and the factors which seem to be related to errors. Accuracy is measured by the sources to whom the reporters attribute the story. When compared with data from previous studies of science news accuracy in newspapers, the present study indicated fewer errors for television news.

Scientists, communications researchers,[1] and even the popular press[2] are aware of the increased interest by the American people in science news of all sorts, but the translation of science into media-appropriate language is not without danger. Reporters have to assimilate technical jargon about the environment, nuclear energy, and medicine and turn it into terms that lay people can understand without distorting the meaning. To Goodfield, the difficulties in translation are worse for the television journalist:

> "If there are problems enough for the print media, it is in television, particularly in news and magazine programming, that we see the constraints grossly exaggerated. The problems of the scoop, of market pressures acting on both the reporters and the owners of the station, of the speed with which the news must be both presented and then superseded--all are monstrously distorted here."[3]

According to polls in recent years, although the results are disputed by some, many Americans say that they rely on television as their chief source of news and that they consider it the most credible news medium. Therefore, television would seem to have a special responsibility to present scientific -- especially medical -- news accurately. False hopes, unnecessary worry, and poor health habits result from misinformation.

In the eyes of the people who serve as sources of information, how accurate is science news on television? If it is not entirely

accurate, what kinds of errors occur most often? What are some of the factors that seem related to those errors? This paper will examine those questions by using techniques typically applied in studies of newspaper accuracy. The paper will focus on accuracy in science news reporting by three commercial network news departments.

Several researchers have attempted to find out how accurately newspapers report general news. The most common technique, which was developed by Charnley,[4] consists of clipping an article out of a newspaper and mailing it to the source or sources cited in the story and asking them to evaluate its accuracy. This kind of research has shown 40 to 60 per cent of the stories are inaccurate, although sometimes in very minor ways.[5] Very little research has been done on accuracy in television news. Singletary and Lipsky found that when local television news stories were transcribed and sent to the sources, 64.5% of the items were entirely accurate.[6]

Some research has focused on the print media's handling of scientific news, where accuracy may be more difficult to obtain and where it may be even more necessary than for general news. O'Keefe surveyed physicians and found that they believed the media did not do a good job of reporting medical news. "Sensationalism, inaccuracy, incompleteness of reports and the ignorance and lack of judgment on the part of the reporter were the factors cited most often as preventing medical news stories from serving an educational function."[7] Tichenor et al. found that 58.9% of the scientists questioned in their survey believed science news was generally accurate.[8] When they were asked to look at specific articles in which they were quoted, 94.5%

considered the articles in general to be accurate.

Dunwoody and Scott examined the contact between the scientist and the journalist.[9] Their research indicated that scientists thought magazines did a better job of covering science news than newspapers, television, or radio. Although many of their respondents had been used as sources several times by the news media, the scientist's background indicated no special expertise. Like Tichenor et al., the authors found a discrepancy between the scientist's evaluation of accuracy in media coverage of science in general and in the coverage of the story in which they had been cited.

Shepherd and Goode used stories written about marijuana in magazines and newspapers to determine on what basis reporters choose their sources.[10] Being a published author on the topic was not a major criterion. Instead, Shepherd and Goode's research indicated that scientists who were in charge of well-known health institutions and who were considered to be experts on the topic of drugs in general were most likely to be selected by reporters.

Tankard and Ryan sent newspaper articles about science to the sources and asked whether any of 42 different errors had occurred in the stories.[11] Only 8.8% of the stories had no errors, according to the respondents. Believing this low percentage might be a result of the large number of possible errors listed in the questionnaire, Pulford did another follow-up study using fewer categories of errors.[12] The scientific sources found 29.4% of the stories in his survey to be completely free of errors. Tankard and Ryan's study also examined the attitudes of the scientists toward media coverage and learned many were critical of how newspapers cover their field.

A question that has concerned several of these communications researchers is: What source of information produces the fewest errors? Berry's studies found the press release led to the most accurate stories.[13] (As Tillinghast points out, material in the press release usually is controlled by the source[14] and so would more likely seem accurate to the source.) The second most accurate source of information, according to Berry's study, was the personal interview, but Scanlon found the interview least effective.[15]

Borman used a panel of experts to judge the accuracy of stories in a variety of magazines.[16] She found that half of the articles were considered accurate by at least eight of ten evaluators. The omission of relevant information was their major criticism, as it had been with scientists in Pulford's research.

METHODOLOGY

Applications of the Charnley method of accuracy assessment to TV news presented logistical as well as methodological problems. Television news uses less attribution than print, and the attribution contains less information. The only identification frequently is a name and perhaps the city where the interview is taking place. If there is no interview, the information may be even more sparse. Therefore, it is difficult to track down the sources cited in stories. Another problem, of course, is that television stories can not be clipped out and mailed. The researcher can get a transcript of the story, but it is not easy to include the visual elements, a most important element of any television news story.

For this study, the researchers began by examining the index to the Vanderbilt News Archives from July 1, 1982 to December 31, 1982 to see which stories could be considered scientifically oriented. The definition of science was broad. The major criterion used in deciding whether a story fit into that category was the title of the source cited in the story. If the source had a label that indicated scientific expertise, such as meteorologist, doctor, or ecologist, the story was considered scientific in nature.

For stories that shared the same subject matter and that used the same sources, only one version was used. The decision on which story to keep was made by rotating the networks. If ABC, CBS, and NBC all did the same scientific story (not an unusual occurrence), then ABC's version would be chosen first; the next time, CBS's and then NBC's, etc. This step was taken for two reasons. First the purpose of this study was not to find out which network was most accurate but to examine how accurate science news on the networks is overall. Secondly, if one source answered questions about all the versions of a running story from the three networks, his or her response would have skewed the results. More likely that person would not have bothered to wade through so much material. An effort was made to find an address on each of the major sources. In about two-thirds of the stories, enough identification was given to make it possible to at least guess at an address. The audio tapes of the selected stories were ordered from Vanderbilt and transcribed. The transcriptions, including the anchor's lead in and interviews, were checked several times for accuracy, but in such work, there is always a chance

that the spoken words will be misunderstood. Each scientific source was sent a copy of the transcript; a stamped, addressed return envelope; and a questionnaire that asked about the type of errors found in each of the stories, the newsgathering process, and the attitudes of the scientists toward media coverage of their field. Recipients were also asked to tell what was their highest academic degree, how often they watch network newscasts, which medium does the best job of covering science news, and how often they have been on a network newscast.

After a pilot test of 10 scientist sources, 215 packets were mailed. A follow-up letter was sent two weeks later; six weeks after the initial mailing, those who still had not responded were sent another copy of the transcript and the questionnaire. The number returned due to insufficient address was 41. Of the remaining 174 questionnaires, 99 were completed and mailed back for a response rate of 46% based on the total mailing, or 56% based on only those presumed to have received the packets.

RESULTS

Almost half of the recipients (48.5%) found the stories completely accurate while only 14% judged them to be "somewhat inaccurate." No one thought the story was "largely inaccurate." (See table one) Table two indicates which errors the respondents found in their stories. It should be pointed out again that the transcripts did not contain a reminder of the video portion of the story. The respondents, therefore, had to depend on their memory of a story that appeared, in

some cases, almost a year before. More research needs to be done to determine if the visual element does introduce elements that sources consider misleading.

The most common complaint was that the air time given the story was not adequate. One respondent commented: "Brevity never does justice to science." Another said: "The description (of my research) is so brief that an uninitiated observer will reach an erroneous conclusion." A third person said: "One minute for the beginning of nuclear energy? Ridiculous!"

Some of the sources (35.4%) said that essential detail was omitted. One scientist pointed out that more data were available to the reporter but that they were "not explored in this typically superficial coverage." Others complained about specific facts that were left out. For example, a respondent said that one report showed a dental school graduate working as a bartender. The story implied that he could not get a job in his chosen field, but the respondent said the graduate was just waiting the two months necessary to get a state license to practice.

Some scientists were concerned about the sensationalistic approach they felt reporters used in covering their stories. The complaints include: A new development was described incorrectly as a "breakthrough;" and "cautions and caveats" were removed to give a report an overly optimistic tone. One respondent said, "The story did not truly deserve the notoriety it received in the context of its limited scientific achievement." Another said that reporters were "more interested in catch phrases than in dealing with complex concepts."

Sometimes, the information reported is accurate, per se, yet

viewers are confused as a result of how it is presented. A respondent cited the following example: The results of a study on coffee were reported, but they were not compared to normal human consumption. A source said the prevalence rate for the condition he was studying could range from 2% to 20%. The reporter chose the larger number, which included very mild cases, and could report, therefore, a cure rate of 95%. The scientist saw the report as being accurate but giving false hope to people with severe cases. As one scientist summed up: "The viewers probably got the basic idea, but no real knowledge."

It might seem hard for a person interviewed on camera to claim to be misquoted; their comments are on videotape for all to see. But if the editing is done improperly, inappropriate meanings may be introduced. One scientist said of his interview: "The only remark used was trivial and almost irrelevant; the rest were omitted." A second source was even more vehement: "Editing is the core of the problem. Essential material is deleted to the point where conclusions seem illogical or even ridiculous. . . . Expert opinion should be given in one block." Another suspected the purpose of the editing was to present a "predetermined view" by the reporter.

When reporters paraphrase the complex ideas and complicated language of scientists, there is always room for error--sometimes major, sometimes minor. One story told about an ocean that had been "discovered," but the report's source said the ocean's existence was only inferred from a theory. A winter was described as the coldest in the century, but a meteorologist said while it did have some cold waves, it did not set a record.

Other complaints did not fit neatly into categories: Some involved obvious errors of fact. The reporter used the statistic of 75%; the source says the truth is closer to 1%. Another said, "Much of the data (in the broadcast news item) was taken from an inaccurate wire story." One scientist complained that the story "gave conclusions not in our report." "An impossible mixture of myth and hypothesis" is how a researcher described the network's version of his study.

Some of the sources were unhappy with the reporter's choice of information to include and to emphasize. A spokesperson for a group said his comments about the group's purposes were omitted. A researcher complained that a story on his work "focused upon the patient--not the technology or the scientific aspects." Two other scientists said more information should have been given about patients chosen for experiments. Broadcast journalists were chastised for not checking with "other authorities in the field to present a more balanced story." A physician said too often reporters assume the story is well known to the audience and then ignore data that may confuse the accepted idea of truth.

The perceptions of the overall accuracy of the story were cross-tabulated with the kinds of errors. The results indicate that some of those who categorized the story as entirely accurate, nevertheless, had some complaints. For example, 17% thought essential detail was omitted; 18% thought the coverage was too sensationalized, and 28% believed their story deserved more air time. Over half of the respondents who thought the story was generally accurate also were

concerned that essential detail was omitted (53.1%) and air time was too brief (56.2%). A third found the coverage too sensationalized (38.2%) and feared that it left a mistaken impression with the audience (33.3%). Of those who said the news report was somewhat inaccurate, 71.4% thought essential detail was omitted, 72.7% that they were quoted inaccurately, 76.9% that their quotes were edited inappropriately, and 84.6% that the audience was left with a mistaken impression. The brevity of the air time concerned 53.8% and the sensationalizing of the story bothered 57.1%.

This study also looked at some of the factors that are commonly considered by communication researchers or by the popular press to lead to problems with accuracy. (See table three) Perceptions of accuracy were crosstabulated with some of these factors. For example, researchers have disagreed about how the origin of a story relates to its accuracy. A third of our respondents did not know how the broadcast reporter originally obtained information about the story. But for those who did know, the perception of accuracy seemed to be related to whether the story originated with a news release or a personal interview. That is to say, about 63% of stories which originated in a news release were judged "entirely accurate"; but only 27.3% of stories which originated through personal interview were judged "entirely accurate." Other sources such as "personal knowledge, press conference, reporter at event, printed article, or other" were not related to story accuracy, although some cells in a 3×8 X^2 were to small for analysis.

The results of crosstabulation indicated that there was little

connection between the respondents' perception of accuracy and most of the other factors. The frequency and type of contact (telephone, personal interview, etc.) were unrelated to perceptions of accuracy. Also unrelated were the amount of time spent with a reporter/producer, and whether the information was reviewed by the source before broadcast.

The survey included a checklist of attitudes toward science reporting. (See table four) Results indicate that the respondents were critical of TV coverage of science news but saw the importance of that coverage to the public (72.7% strongly agree) and were willing to take the time to explain their research to reporters (36.4% strongly agree and 47.5% agree).

This study also compared the background of the respondents to their perception of the story's accuracy. The type of academic degree (bachelor, masters, Ph.D., M.D., other) held by the respondent seemed to make little difference, with one exception. A higher percentage of medical doctors (63% n=41) found the story "entirely accurate" while only 29% (n=24) of Ph.D.s said a story was "entirely accurate." But half of the Ph.D.s thought the story was "generally accurate." There was a tendency for the amount of network TV viewing to be positively related to perception of accuracy, but the relationship was non-significant. Only 3% of the respondents said they never watched network newscasts while 80% said they watched at least once a week. Respondents were asked which medium does the best job of covering science news; 70.3% said magazines; 19.8%, newspapers; 7.7%, television; and 2.2% radio. Finally, they were asked whether they had ever been on a network newscast before. Over 75% of them said yes.

Finally, respondents were invited to add any comments about science news reporting. Some were complimentary of the reporters they had met. One said: "My reaction was a very positive one. Those who interviewed me where considerate and helpful. The reporters quoted me accurately in all instances." Another responded that his dealings with the media had been "favorable," but he found that the smaller the station or newspaper was, the less likely the reporter was to be experienced and the less likely a good job would be done.

Others used the opportunity to vent their spleen: "I have given up on TV being able to present scientific information in an unbiased manner." "Material is chosen to maximize any sensational or bizarre or controversial aspects of the work. Accuracy means little. The reporter and producer will literally air anything to attract an audience. Basically TV news is junk and any science news included is little if any better."

Some scientists offered suggestions for improving network science coverage. Several said science stories require more time than a few minutes if they are to be understood and to be accurate. One respondent said a weekly 15-minute program would do a better job and another suggested a format similar to the MacNeil/Lehrer Newshour to present science news. Some blamed problems on the reporters and thought TV should use more specialized science reporters. Some blamed the commercial nature of network television. "Science news, as other news, suffers from the fact that we have an entertainment medium rather than an information medium. Frankly, I don't see much hope

for improvement as long as the driving concern is to get something simple and sensational so as to be consistent with the sponsor's desire to sell something."

DISCUSSION

Like many other studies of accuracy, this research allowed the sources cited in the story to judge accuracy. The journalists were not given a chance to defend their work. If they could, they might point out that objective errors[17] are easily made under the pressure of deadlines and that the source may be at fault for giving out incorrect or unclear information. Accusations about more subjective errors--such as emphasis, editing, and sensationalism--might be denied completely. The journalists would say that they are just trying to make complicated material simple enough to understand and interesting enough to attract attention. The journalist's purpose is not to turn out a scientific treatise for the enlightenment of a few specialists in an estoric field.[18]

It is, of course, impossible with this methodology to compare the accuracy of the print media with that of the television medium with any kind of precision;[19] nevertheless, it is interesting to note that the error rate for network TV news' science coverage (48.5% said a story was "entirely accurate") is better than the rate for newspaper coverage of science (29.4% of the stories were "completely accurate" in Pulford's study) and is roughly comparable to magazines (Borman reported 50%). Of course, the accuracy rate for newspapers' general reporting is 40% to 60%.

Do these statistics mean that network television is more accurate than local newspapers in reporting scientific news, or do they just mean that the stories on television are shorter in length and have less room for errors to be committed? Do the findings merely underline the fact that television correspondents do not have to worry about the misspellings and typographical errors that plague print journalists? Do the results indicate that as national organizations, the networks can afford to hire specialists in science reporting while local newspapers may not have the resources available? The only definite conclusion that can be drawn on the basis of the data is that network news does not do as bad a job as its worst critics suggest nor does it do as good a job as it should.

What do the findings tell us about the overall accuracy of network newscasts? Researchers in print journalism have found that the accuracy rate for science news is lower than that of general news. This conclusion is not surprising since the complexities of science can be difficult for nonexperts to understand, much less to translate into lay language. The networks employ trained science reporters but do not use the beat system as extensively in other areas as newspapers do;[20] therefore, it is difficult to answer that question also.

How do the networks compare with local stations? When Singletary and Lipsky looked at general news reporting on the local level, they found that 64.5% of the respondents said the story was entirely accurate. Again, no valid conclusions can be drawn from this type of dissimilar data, but future researchers may want to compare the

accuracy of the same story in several media to come up with more definite answers.

The major complaints of the respondents in this study were that inadequate air time was devoted to the story (38.4%) and that essential detail was omitted (35.4%). Tankard and Ryan found the most frequent target of criticism was "misleading headlines" (82.4%), and the second target was the omission of "essential detail" (76.3%). Pulford's study found these two complaints most common also. As for magazines, Borman found the major area of criticism was the omission of relevant information. Singletary and Lipsky found 42% of their respondents thought the TV story was incomplete. The message seems clear that scientists believed their work can not be explained adequately with time constraints and space limitations that are too strict.

The results of the attitude scale in this study are similar to the results Tankard and Ryan found in their study. The wording of some of the statements in both surveys was very similar; it differed only in that one referred to newspapers and one to television. On those statements, the percentage of answers in the agree column were very close with only two exceptions. For the statement, "Most science news reports (on TV) include misstatements of fact," 57% of the news paper respondents agreed but only 29.3% of the broadcast respondents (if the categories of strongly agree and agree are combined). This difference does not necessarily indicate that the scientists consider television superior to newspapers in reporting science news. One of the other questions in the study indicates just the opposite. Perhaps Tankard and Ryan got such a negative response because they

suggested so many types of errors that could occur (a list of 42). The other difference was on a statement saying most science news reports are too brief. Agreeing with that statement were 56% of the newspaper respondents and 81.8% of the television respondents (again combining agree and strongly agree). The scientists seem even unhappier with television's tendency to boil down their research than with the newspapers'.

It is interesting to compare the scientists' perception of the accuracy of their stories with their attitude toward broadcast news coverage of science. While 48.5% of the respondents said the story in which they were cited was entirely accurate, only 1% strongly agreed with the statement that "Science news coverage on TV is generally accurate" and 34.3% indicated qualified agreement. This may be partially explained by the findings of researchers like Dunwoody and Scott that the sources think more highly of articles in which they are quoted than they do of coverage of science in general.

This study used crosstabulation to see if there were some connections between the accuracy of the story and some of the potential problems in newsgathering cited in other research. Berry had found that stories obtained from press releases were most accurate, and Scanlon found that personal interviews led to the most errors. Lawrence and Grey said that a lack of personal contact with the source was more likely to lead to problems in accuracy. None of these factors was related to accuracy in the present study. It is cautioned here that, despite our efforts, the returns was small; a better return might or might not produce different results.

The background information on this survey's respondents revealed 76.8% had been on network newscasts before, many of them several times. It seems that broadcast journalists, like their print counterparts, tend to use the same sources over and over again. No effort was made to see how well qualified these sources were, but future research may indicate that one becomes an interviewee on the network news on the basis of visibility rather than expertise.[21]

The respondents also said they believed magazines did the best job of covering science news. This is consistent with other research. Dunwoody and Scott suggested the reason for the scientists' preference is that they are used to relying on journals for information. Another reason may may be that magazines offer the prized qualities the other media lack: time and space to cover complex details.

It is clear from these studies on accuracy that better reporting of science news is possible. Too many factual errors slip into reports where accuracy is vital. It is also clear that scientists would prefer news reports that contain more information. Producers of television would probably reply that what the scientists want is not necessarily what the audiences want. The conflict between the scientists' desire for thorough, detailed reporting and the journalists' desire for interesting, easy-to-understand copy does not seem easily resolved, and this conflict seems to be a problem in all journalistic media. There does seem to be room for compromise in broadcasting. More use of minidocumentaries and magazine formats would provide more time for explanations of scientific stories. If the interest in science continues to increase, audiences may be more willing to look beneath the surface of the more sensational sounding phrases with the help of trained reporters.

FOOTNOTES

[1]Clyde Z. Nunn, "Readership and Coverage of Science and Technology in Newspapers," Journalism Quarterly, 56:27-30 (1979).

[2]Two recent examples are: Carey Goldberg," TV Coverage of Controversial Medical Issues," TV Guide, Nov. 27, 1982, pp. 43-46; and Edwin Diamond, "Evaluating Network Coverage of AIDS," TV Guide, Oct. 22, 1983, pp. 4-8.

[3]June Goodfield, Reflections on Science and the Media (Washington, D.C.: American Association for the Advancement of Science, 1981), p. 22-23.

[4]Mitchell V. Charnley, "Preliminary Notes on a Study of Newspaper Accuracy," Journalism Quarterly, 13:394-40 (1936).

[5]For more information on accuracy research, see: Michael Singletary, "Accuracy in News Reporting: A Review of the Research," ANPA News Research Report No. 25, Jan. 25, 1980.

[6]Michael Singletary and Richard Lipsky, "Accuracy in Local TV News," Journalism Quarterly, 54:363 (1977).

[7]M. Timothy O'Keefe, "The Mass Media as Sources of Medical Information for Doctors," Journalism Quarterly, 47:99-100 (1970).

[8]Phillip J. Tichenor, Clarice N. Olien, Annette Harrison, and George Donahue, "Mass Communication Systems and Communication Accuracy in Science News Reporting," Journalism Quarterly, 47:673-83 (1970).

[9]Sharon Dunwoody and Byron T. Scott, "Scientists as Mass Media Sources," Journalism Quarterly, 59:52-9 (1982).

[10]Robert Gordon Shepherd and Erick Goode, "Scientists in the Popular Press," New Scientist, 76:482-4 (1977).

[11]James W. Tankard and Michael Ryan, "News Source Perceptions of Accuracy of Science Coverage," Journalism Quarterly, 51:219-25, 334 (1974).

[12]D. Lynn Pulford, "Follow-up of Study of Science News Accuracy," Journalism Quarterly, 53:119-21 (1976).

[13]Fred C. Berry, "A Study of Accuracy in Local News Stories of Three Dailies," Journalism Quarterly, 44:482-90 (1967).

[14]William A. Tillinghast, "Source Control and Evaluation of Newspaper Inaccuracies," Newspaper Research Journal, 3:13-23 (1982).

[15]Joseph T. Scanlon, "A New Approach to the Study of Newspaper Accuracy," Journalism Quarterly, 49:587-94 (1972).

[16]Susan Cray Borman, "Communication Accuracy in Magazine Science Reporting," Journalism Quarterly, 55:345-6 (1978).

[17]For a discussion of the differences between subjective and objective errors, see Gary C. Lawrence and David L. Grey, "Subjective Inaccuracies in Local News Reporting," Journalism Quarterly, 46:753-7 (1969).

[18]Tillinghast, op. cit.

[19]For a Canadian study of the public's perception of which medium is most accurate, see C. Edward Wilson and Douglas M. Howard, "Public Perception of Media Accuracy," Journalism Quarterly, 55:73-76 (1978).

[20]See Edward Jay Epstein, News from Nowhere (New York: Random House, 1973) for more discussion of how the networks gather news.

[21]See Herbert J. Gans, Deciding What's News (New York: Pantheon Books, 1979) for more discussion of how sources are selected for network news.